WHAT IS CLAIMED IS:

1. A driving method for a liquid discharge head including: a discharge port for discharging liquid; a pressure-applying portion communicating with the discharge port, for applying a pressure for discharge to the liquid; and a pressure generating device for generating the pressure, the method comprising a step of applying a first discharge pulse for discharging liquid and a second discharge pulse for discharging liquid to the pressure generating device in a sequential manner in response to an instruction of one-dot discharge,

wherein the pulse width of the first discharge pulse, the pulse width of the second discharge pulse, and a rest time between the first discharge pulse and the second discharge pulse are determined so that a first liquid discharged in response to the first discharge pulse has a volume equal to or greater than that of a second liquid discharged in response to the second discharge pulse and the discharge speed of the first liquid is lower than the discharge speed of the second liquid.

2. A driving method for a liquid discharge head according to claim 1, wherein the pulse width of the first discharge pulse, the pulse width of the second discharge pulse, and the rest time are

determined based on the hydrodynamic resonant frequency of the liquid discharge head.

3. A driving method for a liquid discharge head including: a discharge port for discharging liquid; a pressure-applying portion communicating with the discharge port, for applying a pressure for discharge to the liquid; and a pressure generating device for generating the pressure, the method comprising applying a first discharge pulse for discharging liquid and a second discharge pulse for discharging liquid to the pressure generating device in a sequential manner in response to an instruction of one-dot discharge,

wherein the following three equations are satisfied:

$T_1 = k_1 \times N \times Tr/2$

$T_2 = k_2 \times Tr/2$

$K_{12} = k_3 \times (3Tr/4 - T_2/2)$, for k_1, k_2, and k_3 each ranging from 0.9 to 1.1,

where N denotes an odd number more than one, Tr denotes an inverse of the hydrodynamic resonant frequency of the liquid discharge head, T_1 denotes the pulse width of the first discharge pulse, T_2 denotes the pulse width of the second discharge pulse, and K_{12} denotes the rest time between the first discharge pulse and the second discharge pulse.

4. A driving method for a liquid discharge head according to claim 3, wherein the driving circuit applies a non-discharge pulse, in response to which liquid is not discharged, subsequently to the second discharge pulse, and the following equations are satisfied:

$T_3 = k_4 \times Tr/2$

$K_{23} = k_5 \times (3Tr/2 - T_2/2 - T_3/2)$, for k_4 ranging from 0.2 to 0.5 and k_5 ranging from 0.9 to 1.1,

where T_3 denotes the pulse width of the non-discharge pulse, and K_{23} denotes the rest time between the second discharge pulse and the non-discharge pulse.

5. A driving method for a liquid discharge head according to claim 3, further comprising a step of supplying a driving signal including the first discharge pulse and the second discharge pulse to liquid discharge heads, the liquid discharge heads forming a liquid discharge head group having a plurality of the discharge ports, a plurality of the pressure-applying portions, and a plurality of the pressure generating devices, wherein the pulse width of the first discharge pulse, the pulse width of the second discharge pulse, and the rest time have the same value.

6. A driving method for a liquid discharge

head including: a discharge port for discharging liquid; a pressure-applying portion communicating with the discharge port, for applying a pressure for discharge to the liquid; and a pressure generating device for generating the pressure, the method comprising a driving circuit for applying a first discharge pulse for discharging liquid and a second discharge pulse for discharging liquid to the pressure generating device in a sequential manner in response to an instruction of one-dot discharge,

wherein the following three equations are satisfied:

$T_1 > Tr$

$T_2 = T_1/2$

$K_{12} = 3T_1/2N - T_2/2$,

where N denotes an odd number more than one, Tr denotes an inverse of the hydrodynamic resonant frequency of the liquid discharge head, T_1 denotes the pulse width of the first discharge pulse, T_2 denotes the pulse width of the second discharge pulse, and K12 denotes the rest time between the first discharge pulse and the second discharge pulse.

7. A driving method for a liquid discharge head according to claim 6, wherein the driving circuit applies a non-discharge pulse, in response to which liquid is not discharged, subsequently to the

second discharge pulse, and the following equations are satisfied:

$T_3 < Tr/2$

$K_{23} = 3T_1 / N - T_2 / 2 - T_3 / 2$,

where T3 denotes the pulse width of the non-discharge pulse, and K23 denotes the rest time between the second discharge pulse and the non-discharge pulse.

8. A driving method for a liquid discharge head according to claim 6, further comprising a step of supplying a driving signal including the first discharge pulse and the second discharge pulse to liquid discharge heads, the liquid discharge heads forming a liquid discharge head group having a plurality of the discharge ports, a plurality of the pressure-applying portions, and a plurality of the pressure generating devices, wherein the pulse width of the first discharge pulse, the pulse width of the second discharge pulse, and the rest time have the same value.

9. A driving apparatus for a liquid discharge head including: a discharge port for discharging liquid; a pressure-applying portion communicating with the discharge port, for applying a pressure for discharge to the liquid; and a pressure generating device for generating the pressure, the apparatus

comprising a driving circuit for applying a first discharge pulse for discharging liquid and a second discharge pulse for discharging liquid to the pressure generating device in a sequential manner in response to an instruction of one-dot discharge,

wherein the pulse width of the first discharge pulse, the pulse width of the second discharge pulse, and a rest time between the first discharge pulse and the second discharge pulse are determined so that a first liquid discharged in response to the first discharge pulse has a volume equal to or greater than that of a second liquid discharged in response to the second discharge pulse and the discharge speed of the first liquid is lower than the discharge speed of the second liquid.

10. A driving apparatus for a liquid discharge head including: a discharge port for discharging liquid; a pressure-applying portion communicating with the discharge port, for applying a pressure for discharge to the liquid; and a pressure generating device for generating the pressure, the apparatus comprising a driving circuit for applying a first discharge pulse for discharging liquid and a second discharge pulse for discharging liquid to the pressure generating device in a sequential manner in response to an instruction of one-dot discharge,

wherein the following three equations are satisfied:

$T_1 = k_1 \times N \times Tr/2$

$T_2 = k_2 \times Tr/2$

$K_{12} = k_3 \times (3Tr/4 - T_2/2)$, for k_1, k_2, and k_3 each ranging from 0.9 to 1.1,

where N denotes an odd number more than one, Tr denotes an inverse of the hydrodynamic resonant frequency of the liquid discharge head, T_1 denotes the pulse width of the first discharge pulse, T_2 denotes the pulse width of the second discharge pulse, and K_{12} denotes the rest time between the first discharge pulse and the second discharge pulse.

11. A driving apparatus for a liquid discharge head including: a discharge port for discharging liquid; a pressure-applying portion communicating with the discharge port, for applying a pressure for discharge to the liquid; and a pressure generating device for generating the pressure, the apparatus comprising a driving circuit for applying a first discharge pulse for discharging liquid and a second discharge pulse for discharging liquid to the pressure generating device in a sequential manner in response to an instruction of one-dot discharge,

wherein the following three equations are satisfied:

$T_1 > Tr$

$T_2 = T_1/2$

$K_{12} = 3T_1/2N - T_2/2$,

where N denotes an odd number more than one, Tr denotes an inverse of the hydrodynamic resonant frequency of the liquid discharge head, T_1 denotes the pulse width of the first discharge pulse, T_2 denotes the pulse width of the second discharge pulse, and K_{12} denotes the rest time between the first discharge pulse and the second discharge pulse.

12. A liquid discharge apparatus comprising:

a liquid discharge head including a discharge port for discharging liquid, a pressure-applying portion communicating with the discharge port for applying a pressure to the liquid, and a pressure generating device for generating the pressure;

a driving circuit for applying a first discharge pulse for discharging liquid and a second discharge pulse for discharging liquid to the pressure generating device in a sequential manner in response to an instruction of one-dot plotting; and

a support for supporting a liquid-receiving member for receiving the liquid;

wherein the pulse width of the first discharge pulse, the pulse width of the second discharge pulse, and a rest time between the first discharge pulse and

the second discharge pulse are determined so that a first liquid discharged in response to the first discharge pulse has a volume approximately equal to or greater than that of a second liquid discharged in response to the second discharge pulse and the discharge speed of the first liquid is lower than the discharge speed of the second liquid; and

wherein a position of the liquid discharging head and a position of the support are determined so that the first liquid and the second liquid are combined to be applied to the liquid receiving member.

13. A liquid discharging apparatus according to claim 12,

wherein the following three equations are satisfied:

$T_1 = k_1 \times N \times Tr/2$

$T_2 = k_2 \times Tr/2$

$T_3 = k_3 \times (3Tr/4 - T_2/2)$, for k_1, k_2, and k_3 each ranging from 0.9 to 1.1,

where N denotes an odd number more than one, Tr denotes an inverse of the hydrodynamic resonant frequency of the liquid discharge head, T_1 denotes the pulse width of the first discharge pulse, T_2 denotes the pulse width of the second discharge pulse, and K_{12} denotes the rest time between the first discharge pulse and the second discharge pulse.

14. A liquid discharging apparatus according to claim 12,

wherein the following three equations are satisfied:

$T_1 > Tr$

$T_2 = T_1/2$

$K_{12} = 3T_1/2N - T_2/2$,

where N denotes an odd number more than one, Tr denotes an inverse of the hydrodynamic resonant frequency of the liquid discharge head, T_1 denotes the pulse width of the first discharge pulse, T_2 denotes the pulse width of the second discharge pulse, and K12 denotes the rest time between the first discharge pulse and the second discharge pulse.